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Tapani Ryhanen

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EXAMINER

RUSH, ERIC

ART UNIT

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2624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/763,805	Applicant(s) RYHANEN ET AL.	
	Examiner ERIC RUSH	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/27/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is responsive to the amendments and remarks received 27 November 2009. Claims 31 - 44 are currently pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. The rejections to claims 35 and 36 under 35 U.S.C. 112, second paragraph, are hereby withdrawn in view of the amendments and remarks received 27 November 2009.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 31 - 34, 38 and 40 - 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathiassen et al. U.S. Patent No. 7,251,351 in view of Berberich U.S. Patent No. 5,959,457.

- With regards to claim 31, Mathiassen et al. teach a sensor arrangement comprising at least one sensor, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) at least one integrated

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signal processing circuit for the measurement of signals from the at least one sensor, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) and interconnecting wiring between the at least one sensor and the integrated circuit, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) the arrangement comprises a substrate, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) said substrate forming at least part of said interconnecting wiring and said substrate is further arranged to serve as a functional part of at least one said sensor, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) and wherein said substrate comprises means for forming a sensor together with a sensor part. (Mathiassen et al., Figs. 1, 2, 3 & 5, Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64, Column 4 Lines 2 - 13) Mathiassen et al. fail to teach wherein said substrate and said sensor part are galvanically separated, and wherein said substrate and said sensor part comprise means for transferring energy and measurement information inductively between said substrate and said sensor part.

Berberich teaches wherein said substrate and said sensor part are galvanically separated, (Berberich, Figs. 1 and 4, Column 1 Lines 35 - 57, Column 3 Lines 51 - 60, Column 4 Lines 40 - 43) and wherein said substrate and said sensor part comprise means for transferring energy and measurement information inductively between said substrate and said

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sensor part. (Berberich, Figs. 1 and 4, Column 1 Lines 35 - 57, Column 3 Lines 51 - 60) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Mathiassen et al. with the teachings of Berberich. This modification would have been prompted so that no direct voltage acts on the sensor. Thereby, electrolytic deposits on or removals from the electrodes of the sensor may be prevented, as suggested by Berberich, Column 1 Lines 41 - 46. The need to protect the electrodes of Mathiassen et al. and the dielectric layers from wear, breakage and chemical influences from the outside environment is already a noted concern of Mathiassen et al., column 5 lines 43 - 51. The combination would improve the base device of Mathiassen et al. in the same manner that Berberich improved their device by allowing the sensors to take accurate measurements without noted concern for the sensors lifespan. This combination of elements could be completed using known methods in the art and is likely to yield predictable results, in that the combination would use inductive energy transfer to communicate between sensor and circuitry.

- With regards to claim 32, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said sensor part is a passive circuit. (Mathiassen et al., Column 6 Lines 10 - 19)

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- With regards to claim 33, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to explicitly teach wherein said sensor part comprises an active circuit further comprising means for measuring sensor information and means for transferring the measurement information inductively to said substrate. Berberich teaches wherein said sensor part comprises an active circuit (Berberich, Column 2 Lines 1 - 8, Column 3 Lines 6 - 14) further comprising means for measuring sensor information and means for transferring the measurement information inductively to said substrate. (Berberich, Figs. 1 and 4, Column 1 Lines 35 - 57, Column 3 Lines 14 - 34 and Lines 51 - 60)
- With regards to claim 34, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said sensor is a skin contact sensor. (Mathiassen et al., Abstract, Column 2 Lines 41 - 52)
- With regards to claim 38, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to teach wherein said arrangement further comprises a humidity sensor for sensing ambient humidity. Berberich teach wherein said arrangement further comprises a humidity sensor for sensing ambient humidity. (Berberich, Abstract, Column 2 Lines 57 - 64, Column 3 Lines 14 - 34)

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- With regards to claim 40, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said arrangement further comprises a skin contact sensor. (Mathiassen et al., Abstract, Column 2 Lines 41 - 52)
- With regards to claim 41, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said arrangement further comprises a sensor fixed on the substrate. (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64)
- With regards to claim 42, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said arrangement comprises a biometric sensor. (Mathiassen et al., Abstract, Column 2 Lines 41 - 52)

6. Claims 35 - 37, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathiassen et al. U.S. Patent No. 7,251,351 in view of Berberich U.S. Patent No. 5,959,457 as applied to claim 31 above, and further in view of Harkin U.S. Patent No. 6,327,376.

- With regards to claim 35, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to teach wherein the arrangement further comprises a infrared light source, a infrared light

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detector and second measurement means for measuring absorption of infrared light from a finger. Harkin teaches an arrangement which comprises an infrared light source, (Harkin, Column 7 Line 55 - Column 8 Line 29) a infrared light detector (Harkin, Column 7 Line 55 - Column 8 Line 29) and second measurement means for measuring absorption of infrared light from a finger. (Harkin, Column 7 Line 55 - Column 8 Line 29) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Harkin. This modification would have been prompted in order to increase “the security of recognition or authentication by providing further validation and reducing the possibility of fraudulent deception through use, for example, of a replica finger.” (Harkin, Column 8 Lines 40 – 44)

- With regards to claim 36, Mathiassen et al. in view of Berberich and further in view of Harkin teach an arrangement according to claim 35. Mathiassen et al. teach wherein the arrangement comprises a groove designed for the finger. (Mathiassen et al., Column 8 Lines 29 - 34) Mathiassen et al. fail to teach wherein said infrared light source and said infrared light detector are located at opposite sides of a groove designed for a finger. Harkin teaches wherein said infrared light source and said infrared light detector are located at opposite sides of a groove designed

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for the finger. (Harkin, Column 7 Line 55 - Column 8 Line 29) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich and further in view of Harkin to include further teachings of Harkin. This modification would have been prompted in order to obtain a complete image of the whole finger surface, including the sides of the finger, As prompted by Mathiassen et al. in column 8 lines 29 - 35.

- With regards to claim 37, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to teach wherein said arrangement further comprises a temperature sensor for sensing ambient temperature. Harkin teaches wherein said arrangement further comprises a temperature sensor for sensing ambient temperature. (Harkin, Column 8 Lines 24 – 29) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Harkin. This modification would have been prompted in order to increase “the security of recognition or authentication by providing further validation and reducing the possibility of fraudulent deception through use, for example, of a replica finger.” (Harkin, Column 8 Lines 40 – 44)

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- With regards to claim 43, Mathiassen et al. in view of Berberich teach a sensor arrangement according to claim 31, see above. Mathiassen et al. fail to teach a mobile terminal, wherein it includes a sensor arrangement. Harkin teaches an arrangement in which a sensor arrangement is included in a mobile terminal. (Harkin, Column 10 Lines 15 - 50) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Harkin. This modification would have been prompted in order to incorporate an added level of security into personal portable electronic devices.

- With regards to claim 44, Mathiassen et al. in view of Berberich and further in view of Harkin teach a mobile terminal according to claim 43. Mathiassen et al. fail to teach wherein at least part of the sensor arrangement is encapsulated, such as molded, in the cover of the mobile terminal. Harkin teaches a mobile terminal characterized in that at least part of the sensor arrangement is encapsulated, such as molded, in a cover of the mobile terminal. (Harkin, Fig. 7, Column 10 Lines 15 – 50)

7. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathiassen et al. U.S. Patent No. 7,251,351 in view of Berberich U.S. Patent No.

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5,959,457 as applied to claim 31 above, and further in view of Ganapathi et al. U.S.

Patent No. 6,829,950.

- With regards to claim 39, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to explicitly teach wherein said arrangement further comprises a pressure sensor. Ganapathi et al. teach an arrangement comprising a pressure sensor. (Ganapathi et al., Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Ganapathi et al. This modification would have been prompted in order to eliminate the need for active circuit components (Ganapathi et al., Column 2 Lines 23 - 27) and to further reserve power by requiring pressure to activate instead of just skin contact while maintaining sensitivity to minimal pressure. (Ganapathi et al., Column 7 Lines 24 - 31) This combination of elements could be completed using known methods in the art and is likely to yield predictable results.

Response to Arguments

8. Applicant's arguments filed 27 November 2009 have been fully considered but they are not persuasive.

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9. On pages 4 and 5 of the remarks the Applicant's Representative argues, with respect to claim 31, that there is no motivation to combine Mathiassen et al. with Berberich. Applicant's Representative argues that the combination would not do anything to help anything in the Mathiassen et al. structure as there is no problem comparable to the wetness problem mentioned by Berberich. The Examiner respectfully disagrees. The Examiner asserts that the Mathiassen et al. disclose problems with their dielectric layer needing to be strong yet not too thick in order to maintain accurate measurements and protect the sensor elements from wear, breakage and chemical influences from the outer environment, see column 4 lines 48 - column 5 line 5 and column 5 lines 43 - 51.

10. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Mathiassen et al. express concerns about the safety of their sensor elements and electrodes, some of which are on the outer layer and could be affected by the environment, see column 5 line 63 - column 6 line 3. Berberich teaches that galvanic separation and inductive energy transfer would not only reduce the need for small interconnections to communicate measurements but would also protect the electrodes from wear and tear, see column 1

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lines 35 - 52. The Examiner asserts that the motivation to combine would have been found in the knowledge generally available to one of ordinary skill in the art in view of the Mathiassen et al. and Berberich references.

11. In response to applicant's argument that there is no motivation to combine Mathiassen et al. with Berberich as Mathiassen et al. do not have to overcome the problem of Berberich because the sensor elements of Mathiassen et al. are protected by a dielectric layer. The Examiner asserts that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC RUSH whose telephone number is (571)270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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